INDIANA DEPARTMENT OF TRANSPORTATION

INTER-DEPARTMENT COMMUNICATION

*Standards Section **C** Room N642*

Writer's Direct Line
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November 15, 2001

DESIGN MEMORANDUM No. 01-13
TECHNICAL ADVISORY

TO: **All Design, Operations, District Personnel, and Consultants**

FROM: ***/s/ Anthony L. Uremovich***
Anthony L. Uremovich
Acting Design Policy Engineer
Contracts and Construction Division

SUBJECT: **Use of English Units in Plan Development**

EFFECTIVE: **Immediately**

SUPERSEDES: **Design Memorandum No. 01-06 Technical Advisory**

On March 5, 2001, the Commissioner issued a memorandum to the Executive Staff, Division Chiefs, and District Directors, regarding the use of english units. The memorandum stated that the Department will use english units as the primary measurement system, and metric units as the secondary measurement system, for all policies and contract documents.

Until we incorporate english units into the Design Manual, the attached information should be used as a guide for developing plans with english units. Such information is not intended to change existing design policy.

New surveys are now being taken in english units. The plans developed from such surveys will, of course, be in english units. The plans developed from newly received metric surveys will still be in metric units. Project plan development which has been started in metric units will be completed in metric units. If a consultant wishes to convert newly developed metric plans to english units, it may, but at no increase in cost to the Department. The consultant should first discuss the conversion with the chief of the Design Division.

alu
Attachment

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WIDTHS OF MEDIANS, LANES, SHOULDERS, CURB OFFSETS

Meters	Ft-In.	Meters	Ft-In.	Meters	Ft-In.
25.0	80’-0”	3.6	12’-0”	1.5	5’-0”
18.0	60’-0”	3.3	11”-0”	1.2	4’-0”
8.0	26’-6”	3.0	10’-0”	0.9	3’-0”
5.4	18’-0”	2.7	9’-0”	0.6	2’-0”
4.9	16’-0”	2.4	8’-0”	0.3	1’-0”
4.2	14’-0”	2.1	7’-0”	0.1	4”
3.9	13’-0”	1.8	6’-0”		

DESIGN SPEED

km/h	mph
110	70
100	60
90	55
80	50
70	45
60	40
60	35
50	30
40	25
30	20

BRIDGE CLEAR ROADWAY

Meters	Ft-In.
8.4	28’-0”
7.2	24’-0”
6.6	22’-0”
6.0	20’-0”

Bridge clear roadways of greater than 8.4 m or 28’-0” may be determined by adding figures shown above to represent lane widths or shoulder widths.

HORIZONTAL CURVES

The metric practice of identifying curves by radius rather than degree will also be used for plans developed in english units.

VERTICAL CLEARANCE

Meters	Ft-In.
7.00	23’-0”
5.35	17’-6”
5.20	17’-0”
5.05	16’-6”
4.90	16’-0”
4.45	14’-6”
4.30	14’-0”

STATIONING

Metric: 1000 m / sta
shown as 1+000.000
English: 100 ft / sta
shown as 1+00.00

HMA PAVEMENT

60 kg/m^2 per 25 mm of thickness
= 110 lb/syd per 1 in. of thickness

The millimetric designation in HMA pay item names should not be anglicized as it is part of the pay item identification, for either metric or english pay units.

PRESSURE, STRESS: 7 kPa = 1 psi. 7 MPa = 1 ksi.

For pipe diameter, PCCP thickness, and compacted aggregate depth: 25 mm = 1 in.
Edge of paved shoulder to shoulder break: 0.3 m or 300 mm = 1’-0”.
Where edge of required shoulder to front face of guardrail must be 0.6 m or 600 mm, in english units becomes 2’-0”.
Gutter width for combined curb and gutter: 610 mm = 2’-0”.
The metric practice of expressing cross slopes in percentages will also be used for plans developed in english units.
Projects designed in english units should comply with the criteria contained in the Design Manual. Except as noted herein, the Design Manual values should be soft-converted to english units.